

CLAIMS

1. Wrapping machine for wrapping a plastic foil web around an object to be packaged, said wrapping machine comprising

- a machine frame, which is supported on a fixed base and which comprises upright vertical columns and horizontal cross members connecting the vertical columns to each other,

- a lifting frame arranged to be vertically movable upwards and downwards along the vertical columns by means of a lifting motor, and

- a foil dispenser, on which a foil web roll can be rotatably supported, and which foil dispenser is vertically movable with the lifting frame and arranged to circulate along a circular path around the object to be packaged to unroll a plastic foil web from the foil web roll so as to form a wrapping around the object to be packaged, c h a r a c t e r i z e d in that each vertical column comprises at least two column parts detachably joined together end on end, said column parts comprising a lower column part and an upper column part; and that only the lower column parts of the vertical columns are connected to each other by cross members while the upper column are separate from each other.

2. Wrapping machine according to claim 1, c h a r a c t e r - i z e d in that the wrapping machine comprises splice joint elements for joining the lower column parts and the upper column parts together.

3. Wrapping machine according to claim 2, c h a r a c t e r - i z e d in that the lower column part and the upper column part are box section beams of identical cross-section having a hollow space inside them; and that the splice joint element is a profiled beam having an external form substantially corresponding to the shape of said hollow space.

4. Wrapping machine according to claim 1, c h a r a c t e r - i z e d in that the lower column part comprises a supporting element capable of supporting the lifting frame when the latter is lowered onto it.

5. Wrapping machine according to claim 1, c h a r a c t e r - i z e d in that the lifting motor is secured to the lifting frame so as to be movable with it.

6. Wrapping machine according to claim 1, c h a r a c t e r - i z e d in that the wrapping machine comprises elongate flexible drive elements and wheels driven by the lifting motor for the transmission of power from the lifting motor to produce a vertical motion of the lifting frame.

7. Wrapping machine according to claim 6, c h a r a c t e r - i z e d in that the wheels comprise a drive belt pulley fitted for reeling a flat belt, said drive belt pulley being rotatably mounted by means of a bearing on the lifting frame and rotated by the lifting motor; and that each one of the elongate drive elements consists of a belt whose first end is secured to the upper end of a vertical column while the second end is secured to the drive belt pulley.

8. Wrapping machine according to claim 7, c h a r a c t e r - i z e d in that the lifting frame comprises two parallel elongate lateral frame parts, each extending horizontally between two vertical columns; and that the drive belt pulley is mounted in a position aligned with a lateral frame part and a diverting pulley is provided at each end of the two lateral frame parts, the belt coming from the drive belt pulley being passed over the respective diverting pulley to the upper end of the vertical column.

9. Wrapping machine according to claim 1, c h a r a c t e r - i z e d in that the power transmission means comprise a drive shaft to which the lifting motor is coupled to rotate it, a drive belt pulley being mounted at each end of said drive shaft.

10. Top foil wrapping machine for depositing a plastic foil web over an object to be packaged, said top foil wrapping machine comprising

- a machine frame supported on a fixed base and comprising upright vertical columns and horizontal cross-members connecting the vertical columns to each other,

- a lifting frame arranged to be vertically movable upwards and downwards along the vertical columns by means of a lifting motor, and

- a top foil depositor connected to the lifting frame and arranged to deposit a top foil from a top foil web roll over the object to be packaged, c h a r a c t e r i z e d in that each vertical column comprises at least two column parts detachably joined together end on end, said column parts comprising a lower column part and an upper column part; and that only the lower column parts of the vertical columns are connected to each other by cross-members while the upper column parts are separate from each other.

11. Top foil wrapping machine according to claim 10, c h a r a c t e r i z e d in that the top foil wrapping machine comprises splice joint elements for joining the lower column parts and the upper column parts together.

12. Top foil wrapping machine according to claim 11, c h a r a c t e r i z e d in that the lower column part and the upper column part are box section beams of identical cross-section having a hollow inside them; and that the splice joint element is a profiled beam having an external form substantially corresponding to the shape of said hollow space.

13. Top foil wrapping machine according to claim 10, c h a r a c t e r i z e d in that the lower column part comprises a supporting element capable of supporting the lifting frame when the latter is lowered onto it.

14. Top foil wrapping machine according to claim 10, c h a r a c t e r i z e d in that the lifting motor is secured to the lifting frame so as to be movable with it.

15. Top foil wrapping machine according to claim 10, c h a r - a c t e r i z e d in that the top foil wrapping machine comprises elongate flexible drive elements and wheels driven by the lifting motor for the transmission of power from the lifting motor to produce a vertical motion of the lifting frame.

16. Top foil wrapping machine according to claim 15, c h a r - a c t e r i z e d in that the wheels comprise a drive belt pulley fitted for reeling a flat belt, said drive belt pulley being rotatably mounted by means of a bearing on the lifting frame and rotated by the lifting motor; and that each one of the elongate drive elements consists of a belt whose first end is secured to the upper end of a vertical column while the second end is secured to the drive belt pulley.

17. Top foil wrapping machine according to claim 16, c h a r - a c t e r i z e d in that the lifting frame comprises two parallel elongate lateral frame parts, each extending horizontally between two vertical columns; and that the drive belt pulley is mounted in a position aligned with a lateral frame part and a diverting pulley is provided at each end of the two lateral frame parts the belt coming from the drive belt pulley being passed over the respective diverting pulley to the upper end of the vertical column.

18. Top foil wrapping machine according to claim 10, c h a r - a c t e r i z e d in that the power transmission means comprise a drive shaft to which the lifting motor is coupled to rotate it, a drive belt pulley being mounted at each end of said drive shaft.

19. Method for storing and/or transporting a wrapping machine as defined in claim 1 from the place of manufacture/storage to the place of use for installation, c h a r a c t e r i z e d in that

- the machine is reduced to a low size (A) for packaging, by detaching the upper column parts from the lower column parts of the vertical columns,

- the machine is transported and/or stored in the low packaged size (A), and

- at the place of use, the upper column parts are secured to the lower column parts to install the machine from the packaged size (A) to a full working size (B).

20. Method according to claim 19, c h a r a c t e r i z e d in that at least two machines reduced to the low packaged size (A) are stacked one upon the other for storage and/or transportation.

21. Method according to claim 20, c h a r a c t e r i z e d in that the machines reduced to the low packaged size (A) and stacked upon each other are packed into a transportation means, such as a freight container or the freight compartment of a vehicle, for transportation.

22. Method according to claim 19, c h a r a c t e r i z e d in that, at the place of use, the machine is installed in full working size (B) by the steps of:

- securing the free end of each belt to the upper end of each second column part,

- securing each upper column part to the corresponding lower column part by means of a splice joint element, and

- rotating the drive belt pulleys by means of the lifting motor to reel the belts onto the drive belt pulleys to raise the lifting frame from the supporting elements.

23. Method for storing and/or transporting a wrapping machine as defined in claim 10 from the place of manufacture/storage to the place of use for installation, c h a r a c t e r i z e d in that

- the machine is reduced to a low size (A) for packaging, by detaching the upper column parts from the lower column parts of the vertical columns,

- the machine is transported and/or stored in the low packaged size (A), and
- at the place of use, the upper column parts are secured to the lower column parts to install the machine from the packaged size (A) to a full working size (B).

24. Method according to claim 23, c h a r a c t e r i z e d in that at least two machines reduced to the low packaged size (A) are stacked one upon the other for storage and/or transportation.

25. Method according to claim 24, c h a r a c t e r i z e d in that the machines reduced to the low packaged size (A) and stacked upon each other are packed into a transportation means, such as a freight container or the freight compartment of a vehicle, for transportation.